CALIFORNIA

PROFILES IN

soil health

Esparto, CA
Approx. 6,000 acres
Crops: Irrigated organic crops, vegetables, rice, safflower, sunflowers for seed, wine grapes
Covers: Multi-species

unlock the SECRETS IN THE SOIL

California farmer uses "tiniest livestock" to feed plants, retain moisture and improve crop quality

When you talk to Fritz Durst, do *not* call soil "dirt."

"Dirt is what you build a house on. Soil is a living thing," he will tell you emphatically.

That fundamental understanding is the foundation upon which the Esparto, California farmer's entire agricultural operation is now built. The microbial life in the soil – and the benefits that life brings to his operation – is the reason Durst is a soil health farmer.

"My focus on soil health is actually a holistic approach to farming. I used to just look at the plant itself and ask,

Among the diverse crops grown on Durst's farm is sunflowers for seed.

'What does a plant need to grow?' Today I look at many different things. I look at myself, my family, my employees. My number one focus today besides employees is my soil. If I give to my soil, my soil will give back to me," he says.

But Durst didn't always see it that way.

"My family has been farming for over 100 years, mining these fields of nutrients," he says "They

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started in the 50's adding nitrogen only. In the late 60's 70's we started adding phosphorus and all the time our crops were harvesting micro nutrients out of the soil – things the biology needed to live."

Today his focus is on feeding the microbiology first, feeding his crops second.

Durst's north-central California farm includes beef cattle in the foothills and a lot of dryland crops, as well as irrigated organic crops, vegetables, safflower, rice, wine grapes and sunflowers for seed.

"Soil health kind of evolved into being one of my goals over the last seven or eight years when I observed good things happening in my soil. The soil samples didn't explain what was going on, and I began to learn about the microbes in my soil," he says.

To nurture those microbes, Durst disturbs the soil as little as possible, preferring no-till, in most situations.

"By leaving residue on top of the soil surface, I protect my soil. I protect it from winds and the sun that could rob the moisture from the soil, and it also keeps the temperatures lower, which helps the microbes," he says.

Healthy soil has amazing water retention…
Every 1% increase in organic matter results in as much as 25,000 gallons of available soil water per acre.

In addition to using cover crops as frequently as moisture will allow, Durst is a big proponent of diversified cropping rotations.

"My grandfather and father used rotations, but we didn't really know why we saw a benefit in the crops," he says. "Today, we know that plants exude certain compounds into the soil, which feeds the microbes, the tiniest little livestock we have."

Feeding the microbiology first, his plants second, has helped Durst harvest a wide range of operational benefits, including increased production.

And Durst's focus on his microbial livestock is paying off handsomely.

"My yields have increased substantially over the last 20 years, primarily because my bucket – the ability of my soil to hold moisture – has increased. I have more than doubled the [soil's] water holding capacity," he says. "I'm very proud of the fact that my soil is a good sponge, it accepts a lot of water."

Durst says that if we want our planet to be sustainable we have to start to looking at the health of our soil. That perspective he says, will "open up the can to new ways of farming."

And for those farmers who would like to "open the can" on soil health, Durst offers this bit of sage advice: "Get a book and talk to friends. Talk to many friends because it is almost an art more than it is a science. A lot of it just comes from observation."

Want to unlock the secrets in YOUR soil?
Go to: www.nrcs.usda.gov

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